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Heavy duty vehicles - Regulations Nos. 49 (Emissions of compression ignition and positive ignition (LPG and CNG) engines) and 132 (Retrofit Emissions Control devices (REC))

Proposal for a new Supplement to the 05 series of amendments to Regulation No. 49 (Emissions of compression ignition and positive ignition (LPG and CNG) engines)

Submitted by the expert from the International Organization of Motor Vehicle Manufacturers*

The text reproduced below was prepared by the expert from the International Organization of Motor Vehicle Manufacturers (OICA) to improve the so-called "random check requirement" and define the rounding of test results calculated according to Annex 4A in the 05 series of amendments to Regulation No. 49. The modifications to the current text of the Regulation are marked in bold for new or strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2014–2018 (ECE/TRANS/240, para. 105 and ECE/TRANS/2014/26, programme activity 02.4), the World Forum will develop, harmonize and update Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

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I. Proposal

Paragraph 5.2.3.1., amend to read:

"5.2.3.1. The specific mass of the oxides of nitrogen measured at the random checkpoints within the control area of the ESC test shall not exceed by more than 10 per cent the values interpolated from the adjacent test modes (reference Annex 4A, Appendix 1, paragraphs 5.6.2. and 5.6.3.) **or the limit values in Table 1 in paragraph 5.2.1., whichever is greater**."

Annex 6, insert a new paragraph 5., to read:

"**5. Rounding**

The final test result shall be rounded to the number of places to match the number of decimal places of the applicable emission standard. No rounding of intermediate values leading to the final break-specific emission result is permitted."

II. Justification

1. Random check requirement (paragraph 5.2.3.1.)

Current provisions prevent from introducing engines with much lower emission levels than specified for EURO IV/V (e.g. Euro VI < 0.4 g/kWh). The 10 per cent tolerance band of these very low emission values are below the accuracy of this method (measurement, interpolation, etc…). The provision was defined for EURO IV/V' engines and lead to the fact that low emission engines (EURO VI) cannot fulfil the provisions. The proposal enables to certify Euro VI derived engine types for specific markets according to the 05 series of amendments to Regulation No. 49.

2. Rounding of test results (Annex 6)

The 05 series of amendments to Regulation No. 49 do not specify rounding method for calculating the test results according to the requirements in Annex 4A. A Calculation example is pointed out in Annex 6. This leads to different interpretation. The proposal is in line with the applied praxis when this Regulation was applied in the European Union in the past (EURO III to V), with general mathematic rounding principles and in line with the rounding method applied by the Environmental Protection Agency in the United States of America (40 Code of Federal Register Part 1065). Adding proposed paragraph 5. to Annex 6 will clarify it.